

ELECTROTECHNICAL LABORATORY ETL-10



Electrotechnical laboratory ETL-10 is intended for:

- Testing of cables and other devices by the constant and ac (50 Hz) high voltage;
- Burning-through defective isolation of cables with the next its afterburning;
- Definition of the cable buses lines;
- Topographic definition of damaged places of the cable buses by the induction and acoustic methods;

- Definition of distance up to the damaged place of high-voltage cables a 0,4-10 kV by the pulse not burning-through method on a high and low voltage.

Operating conditions:

- A range of temperatures of air: from - 20°C up to +40°C;
- Relative humidity of air at the temperature 25°C: up to 80%;
- Atmospheric pressure, mm mercury: 650 – 800.

Power supply of ETL-10 is from an industrial single-phase network 220 V, 50 Hz. A supply from the independent generator by capacity not less than 2,2 kVA is supposed. For full realization of opportunities of ETL-10 the capacity of the generator should be not less than 25 kVA.

SPECIFICATIONS:

Power supply	single-phase ac network frequency 50±2 Hz, voltage 220±20 V
Consumed current, A	No more than 100
Parameters of kilovoltmeter for measurement of high constant and AC voltage: Measurement range of the constant voltage, kV Measurement range of AC voltage, kV Reduced relative measurement accuracy, %	30 and 60 60 No more than 3
Length of a network connecting cable on a drum	30 m, section – 8 mm ² , Cable type – KG4x4
Length of protective grounding wire on a drum	30 m, section – 10 mm ² , Cable type – PML
Length of high-voltage coaxial cable PVVEV on the 3 drums	3x30 m, section – 5 mm ²
Length of high-voltage wire PVV-1 for test by a AC voltage, m	30
The borrowed area in the plan, m	1,8x3,0
Weight of the equipment, kg, no more	500
The attendants	2 operators (not less)
Laboratory life, years	10

HIGH-VOLTAGE TEST UNIT БВИ-60/50-M2:

Maximum rectified voltage in prolonged mode of operation, kV	60
Maximum operating current (average value) under rectified voltage, mA	50
Maximum operating AC voltage (rms value), kV	42
Maximum operating alternating current (rms value), mA	50
Dimensions, mm	430x380x570
Weight of the equipment, kg, no more	85

BURNING UNIT БПР-25/8:

Maximum output voltage in standby mode, kV	20
Minimum output voltage in standby mode, kV	1
Quantity of burning stages	6
Maximum current of burning unit in short-circuit mode, A	No less than 8
Maximum afterburning voltage in standby mode, V	500

Maximum current of afterburning in short-circuit mode, A	No less than 16
Consumption power, kVA	18
Output capacity, kVA	No less than 8,5
Burning unit operation mode	prolonged
Dimensions, mm	430x620x500
Weight, kg, no more	90

ACOUSTIC GENERATOR ГAУB – 6-04:

Capacity of energy storage, μF	13,5
Maximum output voltage, kV	30
Maximum power of discharge impulse, joule	2200
Operation modes	manual; automatic with repetition rate of discharge impulses 0,4 Hz
Dimensions, mm	440x580x550
Weight, kg, no more	60

AUDIO FREQUENCY GENERATOR Г34-2500:

Output power in matched mode, W, not less	2500
Maximum output open-circuit voltage, V	300
Maximum output current, A	50
Generation rate, Hz	1024/2048
Modulation rate, Hz	1,5-3
Quantity of stages of load matching	12
Load resistance range, Om	0,5 - 150
Power supply	single-phase ac network frequency 50 ± 2 Hz, voltage 220 ± 20 V
Consumption power, W, not more	3000
Weight, kg	15
Dimensions, mm	320x360x200

RECEIVER П-806:

Adjustment frequencies, Hz	1024 ± 2 and 2048 ± 4
Limiting sensitivity to the magnetic field under signal-to-noise merit 6 dB, $\mu\text{A} / \text{m}$	No more, than 50
Load – headphones with resistance, Om	16 - 100
Power supply	4 Ni-MH accumulators AA with voltage 1,2 V and capacity 1,8 A-hour
Operating supply voltage, V	5
Consumption current, mA	30 - 130
Active time without recharging, hour	15 - 50
There is possibility of on-line inspection of accumulator charging level and input signal value.	

REFLECTOMETER HIGH VOLTAGE OSCILLOGRAPHIC «ISKRA-3»:

Maximum measuring distance to the fault location, km	12,3
Minimum distance to the fault location, m	3
Measuring discontinuity, m	0,2
High voltage monitoring pulses parameters on the load 30 Om : amplitude, kV acceleration time, μs pulse duration, μs	3 - 25 No more, than 0,15 No less, than 2
Low voltage monitoring pulses parameters on the load 30 Om :	

amplitude, V	No less, than 5
acceleration time, μs	No more, than 0,05
pulse duration, μs	1
Weight of reflectometer with sensors and cables, kg	3,8
Active time, hour	No less, than 8
Mean lifetime, year	No less, than 5